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POURL'ETUDE ET L'EXPLOITATION DES PROCEDES
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(54) System for monitoring chamber exit gases by means of absorption spectroscopy, and semiconductor processing system incorporating the same

(57) Provided is a novel chamber effluent monitoring system. The system comprises a chamber having an exhaust line connected thereto. The exhaust line includes a sample region, wherein substantially all of a chamber effluent also passes through the sample region. The system further comprises an absorption spectroscopy measurement system for detecting a gas phase molecular species. The measurement system comprises a light source and a main detector in optical communication with the sample region through one or more light transmissive window. The light source directs a light beam into the sample region through one of the one or more light transmissive window. The light beam passes through the sample region and exits the sample region through one of the one or more light transmissive window. The main detector responds to the light beam exiting the sample region. The system allows for *in situ* measurement of molecular gas impurities in a chamber effluent, and in particular, in the effluent from a semiconductor processing chamber. Particular applicability is found in semiconductor manufacturing process control and hazardous gas leak detection.

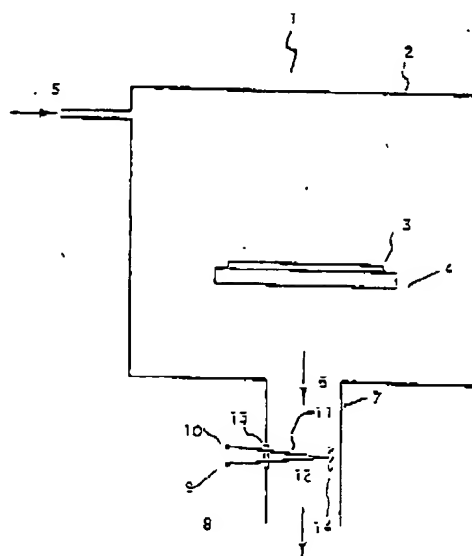


FIG. 1A

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